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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,545	02/27/2004	Javier Arguelles	1406/186	7090
25297 7590 11/18/2008 JENKINS, WILSON, TAYLOR & HUNT, P. A. Suite 1200 UNIVERSITY TOWER 3100 TOWER BLVD., DURHAM, NC 27707				
EXAMINER				
HE, AMY				
ART UNIT		PAPER NUMBER		
2831				
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11/18/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/788,545

Applicant(s)

ARGUELLES ET AL.

Examiner

AMY HE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 5-12 is/are allowed.
6) ☒ Claim(s) 1-4, 13 and 14 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 26 December 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/S5108)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION***Specification***

1. The abstract of the disclosure is objected to because the use of "comprising" (on line 3). Replace it with --including--. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 13 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Kakizawa et al. (U. S. Pub. No. 2005/0146346).

As for claim 1, Kakizawa et al. discloses (in Figs. 1 and 2) a test switching circuit (DFT circuitry in Figs. 1 and 2, including transistors 190, 192 and 290, 292) for a high speed data interface of an integrated circuit comprising a plurality of switching transistors(e.g. 190, 192 in Fig. 1 and 290, 292 in Fig. 2) which switch in a test mode an integrated termination resistor (132 and 134 in Fig. 1) output stage coupled to an output pad (110, 112 in Fig. 1) of said integrated circuit in a data transmission signal path to an integrated termination resistor input stage (260, 262 in Fig. 2) coupled to an input pad (210,212 in Fig. 2) of said integrated

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circuit in a data reception signal path, wherein said plurality of switching transistors provide for a plurality of internal test signal paths between said input pad and said output pad (the analog loop back path, see [0015], [0016], [0018], [0021]).

As for claims 13 and 14, Kakizawa et al. discloses an integrated circuit having high speed data interface comprising:

a transmitting signal path (in Fig. 1) for transmitting data via a data transmission line which is connected through an output pad (110, 112) to an integrated termination resistor output stage (132, 134) coupled to the output pad in said data transmission signal path, wherein the integrated termination resistor output stage (132, 134) is provided for adapting the output impedance of said data transmission signal path to a load connected to said transmission data line through the output pad;

a reception data signal path (see Fig. 2) for receiving data via a data reception line, which is connected through an output pad (210, 212) to an integrated termination resistor input stage (260, 262) coupled to the input pad in said data reception signal path, wherein the integrated termination resistor input stage (260, 262) is provided for adapting the input impedance of said data reception signal path to a load connected to said reception data line through the input pad; and

a controllable test switching circuit (DFT circuitry in Figs. 1 and 2, including transistors 190, 192 and 290, 292) comprising a plurality of switching transistors(e.g. 190, 192 in Fig. 1 and 290, 292 in Fig. 2) for switch in a test

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mode the integrated termination resistor (132 and 134 in Fig. 1) output stage to the integrated termination resistor input stage (260, 262 in Fig. 2) to form an internal feedback test loop (the analog loop back path, see [0015]) within said integrated circuit, wherein said plurality of switching transistors provide for a plurality of internal test signal paths between said input pad and said output pad (the analog loop back path, see [0015], [0016], [0018], [0021]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kakizawa et al. (U. S. Pub. No. 2005/0146346), in view of Gandini et al. (U. S. Patent No. 5, 197,083).

As for claim 2, Kakizawa et al. discloses the test switching circuit according to claim 1 as discussed above. Kakizawa et al. does not specifically disclose that the test switching circuit is connected to a configuration register.

It is conventional in the art to use a configuration register to control and configure transmitter and receiver according to the different operating or test modes, as evidenced in Gandini et al. (col. 11, lines 25-34).

A person of ordinary skill in the art would find it obvious at the time the invention was made to modify Kakizawa et al. to use a conventional configuration register, as taught by Gandini et al. for configuring and controlling the switching test circuitry according to the different operating or test modes (see [0033] in Kakizawa et al. and col. 11, lines 25-34 in Gandini et al.).

4. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kakizawa et al. (U. S. Pub. No. 2005/0146346), in view of applicant's admitted prior art (hereafter referred to as AAP)(see the prior art figure 3 in the instant application)

As for claims 3 and 4, Kakizawa et al. discloses that the termination resistor output and input stages comprise variable resistors (132, 134, 260, 262). Kakizawa et al. does not specifically disclose that the termination resistor output and input stages are programmable.

However, it is conventional in the art to use programmable termination resistor output stage and input stage, as evidenced in AAP (see Fig 3.)

A person of ordinary skill in the art would find it obvious at the time the invention was made to modify Kakizawa et al. to replace the variable termination resistors with the conventional programmable termination resistors as taught in AAP, for the purpose of obtaining a greater range of impedance matching with the load connected to the termination resistor output stage and the input stage.

Allowable Subject Matter

5. Claims 5-12 are allowed.

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6. The following is an examiner's statement of reasons for allowance:

Claims 5-12 are allowable because none of the prior art discloses or fairly suggest a test switching circuit for a high speed data interface of an integrated circuit comprising: a second transistor connected between a first transistor and a reference potential node; a third transistor connected between the reference potential node and a sixth transistor; a fourth transistor connected between the first transistor and a test node; a fifth transistor connected between the test node and the sixth transistor; wherein the six transistor is connected to the termination resistor input stage of the data reception signal path.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

7. Applicant's arguments with respect to claims 1-4, 13 and 14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMY HE whose telephone number is (571)272-2230. The examiner can normally be reached on 9:30am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The

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fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Amy He/
Examiner
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